

Magnetic Resonance in Chemistry

1985

Volume 23

ORMRDB 23(1-12) 1-1084 (1985) ISSN 0030-4921

Wiley Heyden

m R C

Magnetic Resonance in Chemistry

AN INTERNATIONAL JOURNAL

EDITOR-IN-CHIEF

Dr P. M. E. LEWIS John Wiley & Sons Ltd, Baffins Lane, Chichester PO19 1UD, UK

REGIONAL EDITORS

North America

Dr S. L. MANATT

Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California 91109

Professor B. L. SHAPIRO

Department of Chemistry, Texas A & M University, College Station, Texas 77843

Europe

Dr W. BREMSER

BASF Aktiengesellschaft, Hauptlaboratorium, 6700 Ludwigshafen, Germany

Professor G. HABERMEHL

Chemisches Institut der Tierärztlichen Hochschule Hannover, Bischofsholer Damm 15,3000 Hannover 1, Germany

Professor M. L. MARTIN

Chimie Organique Physique, Université de Nantes, 2 rue de la Houssinière 44072 Nantes, France

Professor W. von PHILIPSBORN

Organisch-Chemisches Institut, Universität Zürich-Irchel, Winterthurerstrasse 190 CH-8057 Zürich, Switzerland

Anctrologio

Professor S. STERNHELL

Department of Organic Chemistry, University of Sydney, NSW 2006, Australia

Asia

Professor Y. TAKEUCHI

Department of Chemistry, The University of Tokyo, Komaba, Meguro-ku, Tokyo 153

USSR

Professor E. LIPPMAA

Institute of Chemical Physics and Biophysics, Estonian Academy of Sciences, Lenini Puiestee 10, Tallinn 200001 ADVISORY BOARD

Dr R. J. Abraham University of Liverpool

Prof. F. A. L. Anet University of California

Prof. P. J. Brav

Brown University, Providence

Prof. R. G. Bryant University of Rochester

Prof. P. Diehl University of Basel

Prof. E. L. Eliel University of North Carolina

Prof. P. D. Ellis

University of South Carolina

Prof. J. A. Elvidge

University of Surrey

Dr H. Feltkamp

Bayer/Wuppertal-Elberfeld

Prof. S. Fujiwara

Chiba University

Prof. C. A. Fyfe University of Guelph

Prof. F. Gerson

University of Basel

Prof. T. Goto

Nagoya University

Prof. P. Granger

Prof. Dr H. Günther Gesamthochschule Siegen

Prof. R. K. Harris University of Durham

Dr H. J. Jakobsen
University of Aarhus

Prof. A. R. Katritzky

University of Florida

Prof. Dr H. Kessler Johann Wolfgang Goethe-Universität, Frankfurt Prof. Dr R. Kosfeld Universität Duisburg

Prof. J. B. Lambert

Northwestern University, Illinois

Prof. R. L. Lichter

Research Corporation, New York

Prof. G. Mavel IRCHA, Paris

Prof. I. Morishima

Kyoto University

Prof. M. Ōki

University of Tokyo

Dr P. S. Pregosin

Eidgenössische Technische Hochschule, Zürich

Prof. J. D. Roberts

California Institute of Technology

Dr J. K. M. Sanders

University of Cambridge

Dr J. Schaefer Monsanto Co., St. Louis

Dr J. N. Shoolery

Varian Associates

Prof. W. Simon

Technische Hochschule, Zürich

Dr I. C. P. Smith

National Research Council, Ottawa

Prof. J. A. S. Smith

Queen Elizabeth College, London

Prof. W. B. Smith Texas Christian University

Prof. J. B. Stothers University of Western Ontario

Prof. B. D. Sykes

University of Alberta

Prof. F. Taddei

University of Modena

Prof. Dr A. Weiss

Technische Hochschule, Darmstadt

Copyright © 1985 by Wiley Heyden Ltd

COPYING OF ARTICLES

The code and the copyright notice appearing at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients, on the condition that the copier pay for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. The per-copy fee for each article appears after the dollar sign, and is to be paid through the Copyright Clearance Center Inc. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Such permission requests, or other inquiries, should be addressed to the publisher.

Contents of Volume 23

NUMBER 1 JANUARY 1985

NUMBER 2 FEBRUARS DESERVANTE DESTRUCTION DE LE CONTROLLE DE LE	1
Carbon-13 Variable-Temperature Study of 1-Hetero-spiro[2.5]octanes	2
P. IRATÇABAL, M. F. GRENIER-LOUSTALOT, A. LICHANOT AND F. METRAS	
Carbon-13 NMR Spectra of Isomeric 2-Arylimidazopyridines A. V. TRETYAKOV, L. I. RUDAYA, A. V. EL'TSOV, M. F. LARIN AND V. A. LOPYREV	7
Analysis of the NMR Spectra of Trimethylsilyl-Substituted Sugars by Two-Dimensional Heteronuclear ²⁹ Si- ¹ H Shift Correlation Spectroscopy	10
E. LIEPINSH, I. SEKACIS AND E. LUKEVICS	
Intramolecular Motion and Reorientational Barriers in 9-Fluorenone, 4-Methyl-9-fluorenone and 4,5-Dimethyl-9-fluorenone	12
N. K. WILSON	
¹³ C Chemical Shift and ¹³ C, ¹³ C Coupling Constant Assignment of Quaternary Carbons by Double Quantum Coherence. Use of the DOUBTFUL Pulse Sequence in Natural Abundance ¹³ C NMR Spectra	16
S. R. JOHNS AND R. I. WILLING	
2-Dimethoxyphosphoryl-1,3-dithiane: a Comparison of NMR Studies for ¹ H, ¹³ C and ³¹ P Nuclei by One- and Two-Dimensional NMR Techniques	18
M. ENGELHARDT, G. HÄGELE, M. MIKOLAJCZYK, P. BALCZEWSKI AND D. WENDISCH	
A Study of Steric and Electronic Effects in Some Methane- and Dimethane-sulphonanilides by ¹³ C NMR Spectroscopy	23
M. UL HASAN AND S. A. ALI	
Effect of Nitrogen Substituents on C-N Rotational Barriers in Enamine Derivatives	28
M. AZZARO, S. GERIBALDI AND B. VIDEAU	
¹⁵ N, ¹ H and ¹³ C NMR. A Study of the Complexation of Binuclear Lanthanide(III)–Silver(I) Shift or Relaxation Reagents with Substrates Containing Multiply Bonded Nitrogen	33
M. AUDIT, D. DAVOUST, N. GOASDOUE AND N. PLATZER	
¹³ C and ³¹ P NMR Spectra of 1-Adamantylphosphoryl Derivatives	41
H. DUDDECK AND A. G. HANNA	
NMR Studies of Phosphonate Carbanions: Influence of Substituents on ¹ J(PC) and ¹ J(CH) and Some INDO Calculations	48
G. A. WEBB, MP. SIMONNIN, J. SEYDEN-PENNE AND T. BOTTIN-STRZALKO	
Conformational Analysis of Biphenyls using ¹³ C NMR Spectroscopy	52
R. M. G. ROBERTS	
Reference Data	
¹³ C Chemical Shifts and Configurational Studies of Some Aryl Cyclopropyl Sulphones	55
D. B. REDDY AND T. BALAJI	

M. HÁJEK, L. VODIČKA, P. TRŠKA AND V. SKLENÁR

NUMBER 2 FEBRUARY 1985

Effect of Lithium Cation on the Relaxation Mechanisms of Acids and Alcohols	61
J. B. LAMBERT AND S. V. SIMPSON	
NMR Spectra of Platinum and Rhodium Complexes of Phenazine and Related Ligands R. A. NEWMARK AND A. R. SIEDLE	67
Determination of the Karplus Relationships for the C-2, H-1' and C-6, H-1' Vicinal Coupling Paths of Uridine Derivatives	72
D. B. DAVIES, P. RAJANI, M. MACCOSS AND S. S. DANYLUK	
¹ H and ¹³ C NMR Spectra of the Rotational Isomers of <i>N</i> -Hydroxymethylamides and Derivatives	78
E. N. GATE, D. L. HOOPER, M. F. G. STEVENS, M. D. THREADGILL AND K. VAUGHAN	
Dynamic ¹³ C NMR: a Study of Aryl-Substituted 1-Phenyl-3,3-tetramethylenetriazenes N. FOSTER AND B. PESTEL	83
Carbon-13 NMR Studies on Azolopyridines: 2—The Oxazolopyridine Systems S. CHIMICHI, P. TEDESCHI, R. NESI AND F. PONTICELLI	86
¹ H NMR Analysis of the Methoxy Group Conformation in Methoxychromones K. E. KÖVER AND J. BORBÉLY	90
The Structural Dependence of Geminal and Vicinal CC Coupling Constants JH. CHO, M. KLESSINGER, U. TECKLENBORG AND K. WILHELM	95
¹ H and ¹³ C NMR Spectra of Several (E)- and (Z)-Aldonitrones	101
Y. INOUYE, K. TAKAYA AND H. KAKISAWA	
NMR of Carboxylic- ¹⁷ O in Amino Acids A. STEINSCHNEIDER, B. VALENTINE, M. I. BURGAR AND D. FIAT	104
The conference of the terminal production of the production of the conference of the	
NMR Studies in the Heterocyclic Series: XXV— ¹³ C NMR Spectra of Some Azole Dicyanomethylides	111
M. BEGTRUP, J. ELGUERO, E. DÍEZ-BARRA AND C. PARDO	
Carbon-13 NMR of Tertiary Fluorosteroids as a Stereochemical Probe	116
S. ROZEN AND G. BEN-SHUSHAN	
Conformational Preference of Substituted Naphthalenes: 3—Derivatives of Methoxy- and Acetyl-naphthalene	119
S. R. SALMAN	
¹³ C NMR Study of 3,9-Di(alkylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecanes V. PÄTOPRSTÝ, Ľ. MALÍK, I. GOLJER, M. GÖGHOVÁ, M. KARVAŠ AND J. DURMIS	122

Short		

Improvement of the Two-Dimensional INADEQUATE Technique by a 'Double Selection' Experiment	127
D. PIVETEAU, M. A. DELSUC, E. GUITTET AND J. Y. LALLEMAND	
¹⁵ N NMR Spectra of Pyrimidine and [1,3- ¹⁵ N ₂]Pyrimidine	130
C. M. ADAMS AND W. VON PHILIPSBORN	Solvent
Application of Biosynthetic ¹³ C Enrichment Using [1,2- ¹³ C]Acetate as Precursor for ¹³ C NMR Spectral Assignment of the Isopropyl Methyls of (24β)-Ethylsterols	134
F. NICOTRA, F. RONCHETTI, G. RUSSO, L. TOMA AND B. M. RANZI	P DVIJE
Reference Data	
Carbon-13 NMR Study of Some New Macrocycles. ¹³ C Chemical Shifts of Nactin Antibiotic Models	137
M. EL MALOULI BIBOUT, A. SAMAT, R. FAURE AND J. ELGUERO	
Carbon-13 NMR Spectra of Dispiro Compounds: Effect of Homologation on Chemical Shifts of Spiro Carbons	138
NEELIMA, M. SETH AND A. P. BHADURI	
NMR Spectra of Organogermanium Compounds: 2—13C NMR Spectra of 2-Substituted 1-Trichlorogermylethanes	140
Y. TAKEUCHI, S. TOMODA AND N. KAKIMOTO	
Heteronacien Chrescol Shift Correlation without Soft Polices 21.2	
NUMBER 3 MARCH 1985	
¹⁴ N NQR Study of the Effect of Protonation on the Charge Distribution of Some N-Methylated Ureas	145
J. MURGICH, M. SANTANA R. AND J. ABANERO	
Analysis of Internal Rotations and Rotational Diffusion of N,N-Dimethyl-1-pyrenecarbox-amide in CDCl ₃ Solution	150
A. GRYFF-KELLER AND L. POPPE	
A Quantitative Empirical Treatment of ¹³ C NMR Chemical Shift Variations on Successive Substitution of Methane by Halogen Atoms	156
J. GASTEIGER AND I. SURYANARAYANA	
¹ H Nuclear Magnetic Resonance of α-Hexahydro-1,3,5-trinitro-s-triazine (RDX) and the α-, β -, γ - and δ-Polymorphs of Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	158
A. G. LANDERS, T. M. APPLE, C. DYBOWSKI AND T. B. BRILL	
Carbon-13 NMR Spectra of Anthroquinone-Derived Dyes	161
I. B. RUBIN AND M. V. BUCHANAN	
Applications of ¹⁵ N NMR to a Study of Tautomerism in Some Monocyclic Azoles	166
E. BOJARSKA-OLEJNIK, L. STEFANIAK, M. WITANOWSKI, B. T. HAMDI AND G. A. WEBB	
Two-Dimensional NMR Studies of Polyene Systems: II. β-Carotene	170
J. WERNLY AND J. LAUTERWEIN	
Substituent Effects on ¹³ C Chemical Shifts of 1-Arylsulphonyl-2-arylaziridines	177
A. C. KNIPE, Y. KHANDELWAL, I. E. MCAULEY AND N. M. D. BROWN	

¹⁵ N NMR Studies of the Tautomeric Equilibrium of Some 1-Hydroxybenzotriazoles	181
W. SCHILF, L. STEFANIAK, M. WITANOWSKI AND G. A. WEBB	
Assignment of Quaternary Carbons via Two-Bond Heteronuclear Selective NOE Difference, a Useful Structure Elucidation Aid	185
F, SÁNCHEZ-FERRANDO	MIN N
Solvent and Temperature Effects on One-Bond Spin-Spin Coupling Constants J. C. J. BARNA AND M. J. T. ROBINSON	192
On Triazoles: IV—NMR Study of 5-Amino-1,2,4-Triazole Isomers P. DVORTSÁK, J. REITER, T. SOMORAI AND P. SOHÁR	194
³¹ P Spin-Lattice Relaxation Times of Tertiary Aryl Phosphines and Their Iridium(I) and Gold(I) Complexes S. JANS-BÜRLI AND P. S. PREGOSIN	198
¹¹⁹ Sn and ¹ H NMR of the Novel Complexes [IrH(SnCl ₃) ₅] ³⁻ and [RhH(SnCl ₃) ₅] ³⁻	202
T. YAMAKAWA, S. SHINODA, Y. SAITO, H. MORIYAMA AND P. S. PREGOSIN	
NMR Characterization of Functional Groups: 9—Isomer Ratios of Available Chloromethyl- styrene Mixtures	207
S. L. MANATT, G. D. KHUNE AND N. A. KHATRI	
Short Communications	
Selective Heteronuclear Chemical Shift Correlation without Soft Pulses M. A. DELSUC, E. GUITTET AND J. Y. LALLEMAND	213
Non-Quaternary Suppression with Flip-Back: a Useful Technique for High-Resolution NMR of Solids	216
R. K. HARRIS, A. M. KENWRIGHT AND K. J. PACKER	
Reference Data	
Nuclear Magnetic Resonance III—13C NMR Spectral Studies on Substituted Indoles	218
K. M. BISWAS, R. N. DHARA, H. MALLIK AND S. ROY	DOM:
NUMBER 4 APRIL 1985	
Investigation of the ³¹ P NMR Chemical Shift Dependence of Phosphoryl Compounds on the Inductive and Resonance Effects of Substituents	221
A. I. REZVUKHIN, G. N. DOLENKO AND S. A. KRUPODER	
¹⁷ O NMR Spectra of Tertiary Alcohols, Ethers, Sulfoxides and Sulfones in the Cyclohexyl and 5-Substituted 1,3-Dioxanyl Series and Related Compounds	225
M. MANOHARAN AND E. L. ELIEL	
Definitive Identification of the C-5 and C-7 NMR Signals of Adamantan-2-ol S. SRIVASTAVA, C. K. CHEUNG AND W. J. LE NOBLE	232
Very High Frequency Proton NMR Studies of the Conformations of Opiate Agonists and Antagonists	236
J. A. GLASEL AND H. W. REIHER	

Motional Anisotropy-Induced Unequal Deuterium NMR Spin-Lattice Relaxation of 3α-Deuteriocholesterol and 3β-Deuterioepicholesterol in Solution as a Measure of Sterol Motion	Inventig 5(6)-N
about the Molecular Axis	243
M. P. MURARI, R. MURARI AND W. J. BAUMANN	
¹ H and ¹³ C NMR Spectra of (Z)-N-(o-Hydroxybenzylidene)-p-X-phenylamine N-Oxides and (Z)-N-(2-Hydroxy-1-naphthylmethylene)-p-X-phenylamine N-Oxides	246
N. ARUMUGAM, P. MANISANKAR, S. SIVASUBRAMANIAN AND D. A. WILSON	
Carbon-13 NMR Lanthanide Induced Shifts and T ₁ Studies of the Conformation of Friedelin	250
M. I. M. WAZEER	Solvent
Carbon-13 NMR Spin-Lattice Relaxation and Molecular Motion in 2-Phenyl-1,3,2-dioxarsolane and its 4-Methyl and 4,5-Dimethyl Derivatives	253
D. W. AKSNES AND K. RAMSTAD	
Carbon-13 Delta Shifts and Steric Interactions in N-Aryl-1-isoindolinones and Isoindole-1,3-diones	259
M. A. KHADIM AND L. D. COLEBROOK	
Carbon-13 and Platinum-195 Spin-Lattice Relaxation Times of Tetrabutylammonium Pyridinetrichloroplatinate(II)	263
K. LYSTBÆK AND H. BILDSØE	
Two-dimensional INADEQUATE ¹³ C NMR Study on Vitamin D ₃	267
C. KRUK, A. W. H. JANS AND J. LUGTENBURG	
Expectation Ranges of ¹³ C NMR Chemical Shifts	271
W. BREMSER	du Em
Short Communication	
¹⁷ O NMR Spectroscopy of 4-Substituted Pyridine N-Oxides: Substituent and Solvent Effects	276
D. W. BOYKIN, A. L. BAUMSTARK AND P. BALAKRISHNAN	
Reference Data	
Carbon-13 and Hydrogen NMR Data for a Series of 1,4-Benzodiazepines	280
T. A. SCAHILL AND S. L. SMITH	
Carbon-13 Chemical Shift Assignment of Some Organophosphorus Compounds. Part 3. Diaryl-, Dialkoxy- and Dihalo-(Alkylamido or Arylamido) Phosphorus Derivatives with General Formula Y ₂ P(X)NHR	285
J. M. A. AL-RAWI AND N. AYED	
NUMBER 5 MAY 1005	
NUMBER 5 MAY 1985	
Inconsistent Solvent Shifts Caused by Benzene in the NMR Spectra of N-Alkyl(thio)phosphonothioamides	289
Z. TASHMA	
Conformational Analysis and ¹³ C NMR Spectra of Some 2,6-Diarylpiperidin-4-ones	292
M. UL HASAN, M. ARAB, K. P. RAJAN, R. SEKAR AND D. MARKO	
Proton Deshielding by Spatial Proximity: an Experimental and Theoretical Study for ortho- Substituted Anisoles	296
R. H. CONTRERAS, M. B. FERRARO, D. G. DE KOWALEWSKI AND L. DÍAZ	

Investigation of Benzimidazoles: 5—Transmission of the Substituent Effects in 2-Substituted 5(6)-Nitrobenzimidazoles Studied by ¹ H, ¹³ C and ¹⁵ N NMR Spectroscopy	301
V. A. LOPYREV, L. I. LARINA, T. I. VAKUL'SKAYA, M. F. LARIN, E. F. SHIBANOVA, I. A. TITOVA, M. G. VORONKOV AND E. E. LIEPIN'SH	
Investigation of Benzimidazoles: 6—Transmission of Substituent Effects in Dianion Radicals of 2-Substituted 5(6)-Nitrobenzimidazoles Studied by ESR Spectroscopy	305
V. A. LOPYREV, L. I. LARINA, T. I. VAKUL'SKAYA, E. F. SHIBANOVA, I. A. TITOVA AND M. G. VORONKOV	
¹⁷ O, ¹⁵ N and ¹³ C NMR Chemical Shifts of <i>N,N</i> -Dimethylmethanesulphinamide in Various Solvents	311
AM. HÄKKINEN, P. RUOSTESUO AND S. KURKISUO	
Nitrogen and Oxygen Nuclear Quadrupole and Nuclear Magnetic Resonance Spectroscopic Study of N—O Bonding in Pyridine 1-Oxides	315
P. M. WOYCIESJES, N. JANES, S. GANAPATHY, Y. HIYAMA, T. L. BROWN AND E. OLDFIELD	
Computer Simulation of Lanthanide Induced Shifts (LIS) in Bifunctional Substrates. Geometry of Europium-Quinone Complexes	322
M. C. AVERSA, P. GIANNETTO AND A. SAIJA	and 18
Unusual ¹³ C/ ⁷⁷ Se Couplings in the ¹³ C NMR Spectra of Selenoimidates	327
C. O. MEESE AND W. WALTER	321
PAL ADDROUGH EVADIAGE POWER South on Visualin D.	
Structure at the Anomeric Centre in 2-Alkoxytetrahydropyrans and Their Radicals, Studied by ¹³ C Coupling in NMR and ESR Spectra	330
R. D. MCKELVEY, T. SUGAWARA AND H. IWAMURA	
An Equation Utilizing Exapirically Derived Substituent Constants for the Prediction of Vicinal Coupling Constants in Substituted Ethanes	335
W. J. COLUCCI, S. J. JUNGK AND R. D. GANDOUR	
¹ H NMR and IR Spectra of Antitumour Anthracyclines: Effect of the Substitution Pattern on the Chemical Shift Values of the Phenolic Protons and on IR Absorptions of the Quinone System	344
A. VIGEVANI, M. BALLABIO, E. GANDINI AND S. PENCO	maden
On the Chemistry of Pyrrole Pigments: 60—Natural Isotopic Abundance ¹⁵ N NMR Spectra of Verdinoid Bile Pigments and Their Partial Structures	353
H. FALK AND N. MÜLLER	
Increments for Calculation of the ¹³ C NMR Shifts of Acetylated Polyphenols Considering Steric Interactions	358
S. WEGNER-HAMBLOCH AND KW. GLOMBITZA	
NUMBER 1 SECTIONS	
Carbon NMR Spectra of Conjugated Nitrones	361
J. MOSKAL AND P. MILART	
NMR Studies in the Heterocyclic Series: 27—Carbon-13 NMR Determination of the Protonation Site of Aminopyrazoles in Trifluoroacetic Acid	367
M. BRUIX, J. DE MENDOZA, R. M. CLARAMUNT AND J. ELGUERO	
Equilibrium Constants for Association of Caffeine and Theophylline with Aromatic Salts in Aqueous Solutions Studied by ¹ H NMR Chemical Shift Measurements	375
E ADADI AND A EÖLDEGI	3/3

Reference Data	
Carbon-13 NMR Studies on Catechol, Phenol and Benzene Derivatives of Biological Relevance	379
A. LAI, M. MONDUZZI AND G. SABA	\pplicsh
¹³ C Chemical Shift Assignment of Some 1-Arylamino-3-aminocarbonylpyrroles	383
O. ATTANASI, S. SANTEUSANIO, G. BARBARELLA AND V. TUGNOLI	
NMR Spectral Analysis of Tetrahydro-2-(3,4-dimethoxyphenyl)-4-[(3,4-dimethoxyphenyl)me-thyl]-3-furanmethanol, a Dimethyl Ether of Lariciresinol, from Monechma ciliatum	385
L. MAAT, J. A. PETERS, J. T. M. LINDERS AND S. M. H. AYOUB	n in Cot
¹ H NMR Spectra of Various Methylangelicins	386
P. MANZINI, P. RODIGHIERO, G. PASTORINI AND A. GUIOTTO	
NUMBER 6 JUNE 1985	
REVIEW PAPER: ¹³ C NMR Spectroscopy of Lignan and Neolignan Derivatives	389
P. K. AGRAWAL AND R. S. THAKUR	
Nitrogen-15 NMR Study of Some Barbituric Acid Derivatives	419
A. O. K. NIEMINEN, M. RAUTIO AND E. RAHKAMAA	
Carbon-13, Nitrogen-15, Oxygen-17 and Sulphur-33 NMR Chemical Shifts of Some Sulphur Amides and Related Compounds	424
AM. HÄKKINEN AND P. RUOSTESUO	
Carbon-13 NMR Studies of Oxazolidines, N-Borane-Oxazolidines and Oxazolidinium Salts Derived from Pseudoephedrine: Steric Effect of the BH ₃ and CH ₃ Groups on the Chemical Shifts	428
M. A. PAZ-SANDOVAL, F. SANTIESTEBAN AND R. CONTRERAS	2000
Interpretation of Polar Aromatic Solvent-induced Shifts by Means of the Multipole Approximation Model	432
K. NIKKI AND N. NAKAGAWA	oyoo laa).
Quaternization of Pyrido[2,3-b]pyrazines: ¹ H and ¹³ C NMR Study	437
O. N. CHUPAKHIN, V. N. CHARUSHIN, A. I. CHERNYSHEV AND S. E. ESIPOV	
Aryl Carbon Chemical Shifts of Methylbenzoic Acids and Methylbenzoate Anions J. GUILLEME, E. DIEZ AND F. J. BERMEJO	442
¹ H NMR Spectra of Diastereomeric Aromatic Dipeptides (Phe-Phe) in Aqueous Solution YH. CHU AND KT. WANG	450
NMR Spectra and Stereochemistry of some 7-Substituted 6,14-Bridged Thebaine Derivatives B. C. Uff, A. S. MALLARD, J. A. DAVIS AND R. HENSON	454
Rotational Dynamics by NMR to Probe Solvation of 2-Pyridone in Hydroxylic Solvents B. TIFFON, J. GUILLEREZ AND B. ANCIAN	460
Machanism of Enimarization of 2 3 erythra Aldaeas to 2 3 three Aldaeas an NMR Study	468

A. W. M. LEE

Observation of Long-Range ¹ H- ¹ H Coupling Correlation by the Two-dimensional SUPER-COSY Technique as an Aid in Resonance Assignment	470
S. MAYOR AND R. V. HOSUR	
Applicability of Vicinal Heteronuclear (¹³ C- ¹ H, ¹⁵ N- ¹ H, ¹³ C- ¹⁵ N) Coupling Constants for Conformational Analysis of Amino Acids: Phenylalanine, α-Aminobutyric Acid and β-Alarine	474
B. P. MIKHOVA, M. F. SIMEONOV AND S. L. SPASSOV	
Carbon-13 Nuclear Magnetic Resonance Spectra of the Hydrate, Keto and Enol Forms of Oxalacetic Acid	478
G. BULDAIN, C. DE LOS SANTOS AND B. FRYDMAN	
¹³ C- ¹ H Coupling Constants in Fluoropyridines	482
A. YU. DENISOV, V. I. MAMATYUK AND O. P. SHKURKO	
Study of ¹ H- ²⁹ Si Coupling Constants in Triethoxysilanes and Silatranes by Multiple Quantum NMR	485
E. LIEPINŠ, I. BIRĞELE, P. TOMSONS AND E. LUKEVICS	
Reference Data	
¹³ C NMR Spectra of Plucheinol and its Ester Derivatives	487
F. J. ARRIAGA AND J. BORGES-DEL-CASTILLO	
NUMBER 7 JULY 1985	
metals taken to all the legislating \$1000 of malejar has Tanaggar of comparison of the	
Origin of the Shielding Effect in the ²⁹ Si NMR Spectra of Silatranes	491
V. F. SIDORKIN, V. A. PESTUNOVICH AND M. G. VORONKOV	
NMR Study of Sesquiterpenes of the Helenalin and Parthenin Series	494
E. DÍAZ, G. G. DOMÍNGUEZ, A. MANNINO, G. NEGRÓN AND K. JANKOWSKI	
Line Width Considerations in ³³ S Nuclear Magnetic Resonance of Aqueous Samples	503
P. P. MAHENDROO AND A. D. SHERRY	11 14
Conformational Analysis of N. Anderskinskinskinskinsk	506
Conformational Analysis of N-Acylazabicyclooctanes P. SOHÁR, I. PELCZER, I. VÁCZI, A. TOMBOR AND G. MATOLCSY	500
good like T' hon H' menterrege L.Clebry T to reliante	
Carbon-13/Carbon-12 Isotope Effects on 119Sn Nuclear Shielding	514
S. KERSCHL, A. SEBALD AND B. WRACKMEYER	
Proton Magnetic Resonance Studies of Substituted 3,5-Dimethylbenzenes: Influence of Substituents on the Methyl Proton Chemical Shifts	521
F. S. KAMOUNAH, I. S. AL-SHEIBANI, N. L. SHIBALDAIN AND S. R. SALMAN	
Halogenated Epoxides: 8—13C NMR Data of Ring Halogenated Oxiranes	524
M. SPRAUL, H. KEUL, B. PFEFFER, J. HÄHNLE AND K. GRIESBAUM	
Dynamic NMR: Field Dependence of the Coalescence Temperature and Temperature Depend-	
ence of T ₂ Relaxation Times in N,N-Dimethyltrichloroacetamide	529
V. S. DIMITROV AND J. A. LADD	
¹⁷ O NMR Spectra of 1-Adamantylphosphoryl Derivatives	533
H. DUDDECK AND A. G. HANNA	

Conformational Equilibria and Torsional Barriers of the Isopropyl Groups in N,N-Disopropylbenzamide and its Thio and Seleno Analogues	536
U. BERG AND I. PETTERSSON	330
Proton NMR Study of Methyl- and Fluoro-substituted 6- and 7-Ethoxy-1-methoxytricyclo[3.3.0.0 ^{2.8}]oct-3-enes	540
A. W. H. JANS, B. VAN ARKEL, E. M. OSSELTON AND J. CORNELISSE	
Structural Assignment of the Isomeric 2- and 4-endo-Iodobicyclo[3.3.1]non-6-ene-3-endo-carbonitriles by Two-dimensional ¹ H and ¹³ C NMR Spectroscopy	548
H. DUDDECK, M. KAISER AND D. BROSCH	
Carbon-13 NMR Studies of Primary Amines and their Corresponding 2,4,6- Trimethylpyridinium Salts	553
A. T. BALABAN, A. DINCULESCU, J. ELGUERO AND R. FAURE	
Heavy Metal Spin-½ Nuclei. Platinum-195 Relaxation Times in Phosphorus-Platinum(0) Compounds and Their Dependence on the Geometry of the Complex	559
R. BENN, H. M. BÜCH AND RD. REINHARDT	
Residual (¹³ C, ¹⁴ N) Dipolar Coupling in ¹³ C NMR of Solid Nitrogen-containing Aromatic Compounds	565
R. K. HARRIS, P. JONSEN AND K. J. PACKER	
Short Communications	
Determination of the E,Z Configuration of Alkenephosphonates by the Use of Vicinal ¹³ C- ³¹ P Coupling Constants	578
S. L. SPASSOV, L. MARKOVA, D. M. MONDESHKA, CH. N. TANCHEVA AND CH. M. ANGELOV	
⁷³ Ge and ¹³ C NMR Spectra of Some Methylgermacyclohexanes	580
Y. TAKEUCHI, M. SHIMODA AND S. TOMODA	
SIMPLE ¹ H NMR Observation of Cooperative Hydrogen Bonding in O-3'-Sucrose Derivatives	582
J. C. CHRISTOFIDES AND D. B. DAVIES	
Reference Data	
¹³ C NMR Spectra of 1-Amino-1,2,3-triazole Derivatives: 2—Identification of 4,5-Unsymmetrically Substituted 1-(N,N-Diaroyl)amino-1,2,3-triazoles	585
N. A. RODIOS	
NUMBER 8 AUGUST 1985	
Molecular Conformation of N,N' -Diarylthioureas: an Assessment by ¹ H NMR and Infrared Spectroscopy	591
L. V. SUDHA, S. MANOGARAN AND D. N. SATHYANARAYANA	
Steric Influences on Spin-Lattice Relaxation Rates of Methyl Protons in Substituted Aromatic Molecules	597
W. J. CHAZIN AND L. D. COLEBROOK	
Steric Interaction Between the Peripheral Substituents of 10(S)-Chlorophyll Derivatives and its Conformational Consequences: a Proton Magnetic Resonance Study	605
P. H. HYNNINEN AND S. LÖTJÖNEN	

¹³ C NMR Signal Assignment of Friedelin and 3α-Hydroxyfriedelan-2-one	616
H. E. GOTTLIEB, P. A. RAMAIAH AND D. LAVIE	
Simplified Measurement of Lanthanide-induced shifts	621
D. J. RABER AND J. A. PETERS	
Intramolecular van der Waals Interactions and Chemical Shifts: a Model for β- and γ-Effects	625
S. LI, AND D. B. CHESNUT	
One- and Two-dimensional Nuclear Overhauser Effect. Investigation of the Stereochemistry of 5-Functionalized 2-Imidazolines	639
A. MARSURA, C. LUU-DUC AND R. NARDIN	
¹ H Assignments of Glycopeptide Antibiotics by Double Quantum NMR and Relayed Correlation Spectroscopy	645
S. W. FESIK, T. J. PERUN AND A. M. THOMAS	
Conformation—Activity Relationships in Diethylmethyl-2-[p-(o-alkyloxybenzamido)benzo-yloxy]ethylammonium Bromides in Solution as Detected by One- and Two-dimensions. *H NMR Spectroscopy	649
A. SEGA, E. GAGGELLI AND G. VALENSIN	
Investigation of the Amide Rotation in N,N-Dialkylbenzamides: 7—Re-examination of the Role of the Hydrogen Bond in 2-Mercapto Substituted Derivatives	655
A. GRYFF-KELLER AND P. SZCZECIŃSKI	
¹⁷ O NMR Chemical Shifts of the Twenty Protein Amino Acids in Aqueous Solution	659
I. P. GEROTHANASSIS, R. N. HUNSTON AND J. LAUTERWEIN	
Re-investigation of the Conformational Interconversion of the 1,2,3,6,7,8-Hexahydropyrene Cation Radical by EPR, ENDOR and TRIPLE Spectroscopy	666
R. MÄKELÄ AND M. VUOLLE	
NMR Spectroscopy of Platinum(II)-8-Substituted Quinoline Complexes. "J(PtH) Coupling Constants and Pt \cdots H—C Interactions	671
C. G. ANKLIN AND P. S. PREGOSIN	
Concerted Use of Two-dimensional NMR Techniques in the <i>Ab Initio</i> Assignment of Complex Spectra: Complete Proton and Carbon-13 Assignment of Oligomycin A	676
G. A. MORRIS AND M. S. RICHARDS	
Short Communication	
Residually Coupled Attached Proton Test in the ¹³ C NMR Assignment of Natural Products	684
P. CREWS, S. NAYLOR, B. L. MYERS, J. LOO AND L. V. MANES	
Reference Data	
Complete Assignments of the ¹³ C NMR Spectra of Bilirubin-IXα and its Dimethyl Ester N. MÜLLER	688
¹³ C NMR Spectra of Several Tricyclo[6.3.0.0 ^{2.6}]undecane Derivatives	689
J. L. JURLINA, A. J. RAGAUSKAS AND J. B. STOTHERS	
NUMBER 9 SEPTEMBER 1985	
Asymmetry Parameters of the Electric Field Gradient at the ³⁵ Cl Nuclei in Compounds of the XC ₆ H ₄ CH ₂ Cl Series (X=CH ₃ , Cl)	693
V. P. FESHIN, G. V. DOLGUSHIN, M. G. VORONKOV, YU. E. SAPOZHNIKOV, YA. B. JASMAN AND E. P. POPOVA	1

¹⁷ O NMR Spectroscopy of Heterocycles. Steric Effects for N-Oxides	695
D. W. BOYKIN, P. BALAKRISHNAN AND A. L. BAUMSTARK	(AT AT)
Electron-Nuclear Double Resonance (ENDOR) Studies of Neutral Odd-Alternate Aromatic Hydrocarbon Free Radicals Formed by Thermal Dissociation	698
I. C. LEWIS AND L. S. SINGER	
Carbon-13 NMR Studies of Olefins Having Nitrile and Methoxycarbonyl Substituents. Additivity Relationships	705
M. BARFIELD, T. GOTOH AND H. K. HALL, JR	
Application of Two-dimentional Correlated NMR Techniques to the Structure Elucidation of 1-Methoxy-endo-tetracyclo[6.3.0.0 ^{2,1} .0 ^{3,7}]-undec-9-ene	710
C. KRUK, A. W. H. JANS, J. CORNELISSE AND J. LUGTENBURG	
Fractional Populations of Individual Conformers in Multidihedral Systems: a J Coupling Constant Approach	715
V. BARONE. F. LELJ AND G. ABBATE	
Synthetic Applications of N-N Linked Heterocycles Part 18†—Substituent Effects on the ¹³ C NMR Spectra in N-(4-Aryliminio-2,6-Dimethylpyridin-1-yl)pyridinium Bistetra-fluoroborates, and Some Variable-Temperature ¹ H NMR Measurements	720
M. P. SAMMES, K-W. HO AND A. R. KATRITZKY	
Solute Molecular Structure Determination by NMR: Furan in Liquid Crystal Mixtures	725
J. JOKISAARI, Y. HILTUNEN AND H. HEIKKILÄ	
Carbon-13 Chemical Shift Assignment of Some Organophosphorus Compounds IV†—2-oxo- and 2-Thio-2-phenoxy-1,3,2-diazaphosphorinanes and Related P(IV) Compounds	728
J. M. A. AL-RAWI, G. Q. BEHNAM, N. AYED AND R. KRAEMER	
An NMR Study of the Conformation of Covalently Linked Porphyrin Dimers	732
L. BENTHEM, R. B. M. KOEHORST AND T. J. SCHAAFSMA	
Enantiomeric Purity of Chiral Metal Carbonyl Complexes Using Eu(hfc) ₃	739
A. SOLLADIÉ-CAVALLO AND J. SUFFERT	
13C NMR Spectra of Aryl-Substituted Spiro-cyclopropanes†	744
A. ABDEL-WAHAB, S. H. DOSS, H. DÜRR AND P. SPANG	/-4-4
the Name of Additional Control of Street and the Section of the	DV-0.25
A Theoretical and Empirical Approach to Solvent Effects on Nitrogen Nuclear Shielding	748
M. WITANOWSKI, J. SITKOWSKI, S. BIERNAT, B. KAMIENSKI, B. T. HAMDI AND G. A. WEBB	
A ¹ H and ¹³ C NMR Conformational Study of Methyl-Substituted Isochromanes	754
K. PIHLAJA, J. MATTINEN, E. KLEINPETER, R. MEUSINGER, CH. DUSCHECK AND R. BORSDORF	
Studies in the Synthesis of C-Ring Bridged Morphinans 3†—13C NMR Analysis of Some Simple and complex Bicyclooctane Derivatives	759
V. F. ROCHE, D. L. NAGEL AND E. B. ROCHE	
Stereochemical Studies of Tetracycline Antibiotics and Their Common Impurities by 400 MHz ¹ H NMR Spectroscopy	767
A. F. CASY AND A. YASIN	
Analysis of Nitration Products of 1-Methylpyrene by ¹ H Nuclear Magnetic Resonance	771
F. L. CHOW, R. C. GARNER, C. N. MARTIN AND B. E. MANN	171

Anisotropic Solvent-Induced Shifts of the Trimethylsiloxy Group	774
J. R. PARSONAGE AND E. A. VIDGEON	
Binuclear Lanthanide(III)-Silver(I) NMR Shift Reagents: Investigations of New Achiral and Chiral Analogs	778
T. J. WENZEL, A. C. RUGGLES AND D. R. LALONDE, JR	
An Investigation of the Tautomeric Equilibria of Some 3-Hydroxyindazole Derivatives by ¹⁵ N NMR Spectroscopy	784
W. SCHILF, L. STEFANIAK, M. WITANOWSKI AND G. A. WEBB	
Deuterium Isotope Effects on ¹³ C NMR Chemical Shifts in 7,12-Dimethylbenz a anthracene D. W. JONES AND J. D. SHAW	787
Application of ¹⁵ N NMR to a Quantitative Investigation of Tautomerism in Some Thiolopyridines	790
L. STEFANIAK, G. A. WEBB, C. BREVARD, M. BOURDONNEAU, R. LEJEUNE, L. THUNUS AND C. L. LAPIÈRE	
Reference Data	
¹³ C NMR Spectra of 2-Amino-4H-pyran Derivatives	793
C. PASCUAL, N. MARTIN AND C. SEOANE	
Carbon-13 and Proton NMR Spectra of 1(2H)-Isoquinolinone, 1(2H)-Phthalazinone, 4(3H)-Quinazolinone and their Substituted Derivatives	795
S. SPASSOV, I. A. ATANASSOVA AND M. A. HAIMOVA	
and the second states are the second	
NUMBER 10 OCTOBER 1985	
114 Storty of the Contemporation of Constant's Linked Pergipric Disease	
¹⁴ N Nuclear Quadrupole Resonance in Substituted Isatin Compounds	801
P. J. BRAY, R. V. MULKERN AND S. G. GREENBAUM	
¹³ C Nuclear Magnetic Resonance Spectra of Amaryllidaceae Alkaloids I—Alkaloids with the Crinane Skeleton	804
A. W. FRAHM, A. A. ALI AND M. A. RAMADAN	
¹³ C NMR and Azomethine ¹ H NMR Spectra of Substituted N-Benzylideneanilines and Hammett Correlations	809
A. ECHEVARRIA, J. MILLER AND M. GRAÇA NASCIMENTO	
Halogeno-Substituted 2- and 3-Methylbenzo[b]thiophenes: Use of ¹ H NMR Spectral Analysis and ¹ H{ ¹ H} Nuclear Overhauser Effect for Locating the Halogen Substituent	814
Ma. ROSA CUBERES, M. MORENO-MAÑAS AND F. SÁNCHEZ-FERRANDO	
¹³ C Nuclear Magnetic Resonance Spectra of Bridged-Ring Steroids and Related Compounds	822
F. M. WINNIK AND P. YATES	
An ESR Study of the Polymerization of Tetrahydrofuran with Simple Inorganic Cations Containing Sulphur and Nitrogen	828
S. A. FAIRHURST, A. HULME-LOWE, K. M. JOHNSON, L. H. SUTCLIFFE, J. PASSMORE AND M. J. SCHRIVER	
Data Reduction by Double Forward Fourier Transformation	832
K. ROTH AND B. J. KIMBER	

ESR of Cation Radicals of Phenothiazine Derivatives	834
A. G. MOTTEN AND C. F. CHIGNELL	
¹³ C NMR Spectra of Some Mesoionic 1,2,3-Triazoles	842
C. A. TSOLERIDIS AND N. E. ALEXANDROU	
A ¹³ N NMR Study of Some Fused Polyaza Heterocyclic Ring Systems	853
L. KACZMAREK, P. NANTKA-NAMIRSKI, L. STEFANIAK, G. A. WEBB, D. DAVOUST AND J. J. BASSELIER	Compo
Differences and Sums of Traces within COSY Spectra (DISCO) for the Extraction of Coupling Constants: 'Decouplint' After the Measurement	844
H. KESSLER, A. MÜLLER AND H. OSCHKINAT	
Substituent Chemical Shifts in NMR 1—Proton Resonance Spectra and Geometries of Norbornene, Norbornane and Adamantane	856
R. J. ABRAHAM AND J. FISHER	
Substituent Chemical Shifts in NMR 2—Bromine SCS in Rigid Molecules	862
R. J. ABRAHAM AND J. FISHER	- 002
Short Communication	
Revision of the ¹³ C NMR Signal Assignment of Harman, Based on One- and Two-Dimensional	
INADEQUATE Spectroscopy	872
D. H. WELTI	
Reference Data	
¹ H NMR Spectra of Variously Annulated Furocoumarins	875
P. MANZINI, P. RODIGHIERO, A. CHILIN AND A. GUIOTTO	
¹ H and ¹³ C NMR Spectra of New Condensed Tri- and Tetra-cyclic 1,2,4-Triazole Ring Systems	877
I. GOLJER, J. SVĚTLÍK AND F. TUREČEK	
Hydrogen-Bonded 2-Hydroxybenzalazines: Complete Assignment of ¹ H and ¹³ C NMR Spectra	879
E. MELÉNDEZ, J. L. SERRANO AND F. SÁNCHEZ-FERRANDO	
Letters to the Editor	
Some Considerations on the Performance of Spin Decoupling Difference NMR Spectroscopy	003
(SDDS) Experiments M. A. BERNSTEIN	882
The first of Manager 1 and the state of the property of the state of t	
NUMBER 11 NOVEMBER 1985	
¹⁷ O NMR of Nucleosides 3—Chemical Shifts of Substituted Uridines and Ribothymidines	885
H. M. SCHWARTZ, M. MacCROSS AND S. S. DANYLUK	organia l
Configuration and Conformation of Some 4-Hydroxy-cis- and -trans-1-oxadecalins	895
R DOLMAZON AND S. GELIN	
Intelligio A SIS of the Methyl Protons of Complex	899
Intrinsic ASIS of the Methyl Protons of Camphor J. FERNÁNDEZ BERTRÁN AND M. R. RODRÍGUEZ	077
	002
NQR and NMR Study of Pseudorotation in Solids G. E. KIBRIK, I. A. KJUNTSEL, E. S. KOZLOV, V. A. MOKEEVA AND G. B. SOIFER	903

Substituent Effects on ¹ H NMR Spectra of 4- and 4'-Substituted trans-N-Benzylideneanilines in Acidic Solution	908
G. ODIAN, NJ. YANG AND Y. WEI	
Carbon-13 and Mercury-199 NMR Data for Methyl-Substituted Bisaryl Mercury Compounds	916
K. E. ROWLAND AND R. D. THOMAS	
¹³ C NMR Spectra of Wyosine, a Hypermodified Nucleoside of Transfer RNAs, and Related Compounds	920
B. GOLANKIEWICZ AND W. FOLKMAN	
Carbon-13 NMR of Some Organophosphorus Compounds 5—2-Oxo- or 2-Thio-2-, 3-, 4-, 5- or 6-Substituted 1,3,2-Oxazaphosphorinanes and Related P(IV) Compounds	925
J. M. A. AL-RAWI, N. AYED, R. KRAEMER AND J. NAVECH	
³¹ P Chemical Shifts and ³¹ P- ¹³ C Coupling Effects in the Stereochemical Analysis of Benzo-7- phosphanorbornene Derivatives	929
L. D. QUIN AND F. C. BERNHARDT	
High-Field Orientation Effects in the High-Resolution Proton NMR Spectra of Diverse Porphyrins	935
A. A. BOTHNER-BY, C. GAYATHRI, P. C. M. van ZIJL, C. MacLEAN, JJ. LAI AND K. M. SMITH	
¹ H, ³ H and ¹³ C NMR Studies on Porphobilinogen	939
J. N. S. EVANS, P. E. FAGERNESS, N. E. MACKENZIE AND A. I. SCOTT	303
The Solution Structure of Lidocaine: Conformational Analysis and NMR Lanthanide-Induced Shifts	945
L. A. LaPLANCH, G. VANDERKOOI, H. JASMANI AND M. MAT SUKI	
Analysis of the Proton, Carbon, and Nitrogen NMR Spectra of cis,cis- and cis,trans-1,3,5-Triaminocyclohexane	952
C. YU, C. L. DUMOULIN AND G. C. LEVY	
¹³ C NMR Spectra of 5β, 14β-Hydroxysteroids	959
G. G. HABERMEHL, P. E. HAMMANN AND V. WRAY	i = ml
Endor Studies of Cation Radicals from Pharmacologically Active Phenothiazines N. HELLE, H. KURRECK, M. BOCK AND W. KIESLICH	964
Short Communications	
Through-Space ¹⁹ F, ¹⁹ F Spin-Spin Coupling Constants in Some Fluoroallyl Cations	971
V. I. BAKHMUTOV, M. V. GALAKHOV AND E. I. FEDIN	
Deuterium Isotope Effects on ¹⁴ N and ¹⁵ N Nuclear Shielding in Simple Nitrogen-Containing Compounds	973
A. LYČKA AND P. E. HANSEN	
Reference Data	
¹³ C NMR Spectroscopy of Functionalized Alkenyl and Cycloalkenyl Cyclopropanes	977
J. C. CHALCHAT, R. Ph. GARRY, B. LACROIX AND A. MICHET	
¹⁷ O NMR Spectra of 2-Substituted and 2,5-Di-Substituted Furans. The Inapplicability of the Hammett LFER to Correlate Chemical Shifts	985
E. L. CLENNAN AND M. E. MEHRSHEIKH-MOHAMMADI	

¹³ C NMR Spectra and the Stereochemistry of the Adducts of Enaminones with P-Benzoquinone	988
L. KOZERSKI	
Carbon-13 NMR Study of Acridine Derivatives: ¹³ C Chemical Shifts of Some New 9-Alkylthio-acridines and 9-Alkylthio-1,2,3,4-tetrahydroacridinium Salts	991
R. FAURE, P. POULALLION, J. P. GALY, G. GIOVANANGELLI, J. C. SOYFER AND J. BARBE	
NUMBER 12 DECEMBER 1985	
REVIEW PAPER: Carbon-Carbon Coupling Constants Derived from Biosynthetic Studies R. M. HORAK, P. S. STEYN AND R. VLEGGAAR	995
Calculation of ¹ H Chemical Shifts of Conjugated Alternant Hydrocarbons with (4m) Rings H. VOGLER	1040
The Structure of Thialene as Studied by Proton Magnetic Resonance in a Nematic Phase N. SURYAPRAKASH, C. L. KHETRAPAL, R. F. X. KLEIN AND V. HORAK	1045
 ¹³C NMR Data Bank Techniques as Analytical Tools C. V. v. d. LIETH, J. SEIL, I. KÖHLER AND H. J. OPFERKUCH 	1048
Multidimensional Spectroscopy W. BREMSER, W. FACHINGER	1056
Measurement of Long-Range Heteronuclear Selective ¹³ C{ ¹ H} NOE Enhancements: 4-(α-Arylethylidene)-2-Phenyl-5(4H)-oxazolones C. CATIVIELA AND F. SÁNCHEZ-FERRANDO	1072
Selective Heteronuclear INADEQUATE as an Assignment Technique: Applications to ²⁹ Si- ¹³ C Couplings in Pertrimethylsilylated Products	1076
J. PAST, J. PUSKAR, M. ALLA, E. LIPPMAA AND J. SCHRAML	
Short Communication	
Solid-State Tin-119 NMR Spectroscopy: The First Observations of (Tin-119, Tin-117) Coupling Constants	1080
R. K. HARRIS, T. N. MITCHELL AND G. J. NESBITT	
Reference Data	
Computer-Assisted Analysis of the ¹ H NMR Spectra of Peracetylated Galactose-Containing Oligosaccharides	1082
M. L. JIMENO, M. MARTIN-LOMAS AND A. ALEMANY	